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The Fisheries of Kenya, 1975

William B. Folsom

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FISHERIES OF KENYA, 1975

William B. Folsom
Regional Fisheries Attache
U.S. Consulate General, Casablanca, Morocco

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ABSTRACT

Fishermen in the East African country of Kenya caught over 27,000 metric tons (t) of fish in 1975, about a 20-percent decline from the record catch of nearly 34,000 t in 1970. Catches from Kenya's many interior lakes provide most of the country's catch. Only one company, a joint venture between the Kenya Government and a Japanese company, is currently engaged in commercial marine fishing. Kenya has both freshwater and marine sport fisheries, and they are an important part of the nation's tourist industry. Korean longliners fished for tuna out of Mombasa, but apparently pulled out of Kenya in 1976. Kenya is a net importer of fishery products. In 1975, imports totaled 2,400 t compared to exports of only 1,100 t. Business opportunities for U.S. firms appear rather limited. There may be a potential to develop fisheries for snapper and deep-water shrimp. Other opportunities exist for the sale of small boats, refrigeration equipment, refrigerated trucks, and sport fishing equipment. Perhaps the best opportunities exist for U.S. companies capable of assisting in developing aquaculture operations in Kenya.

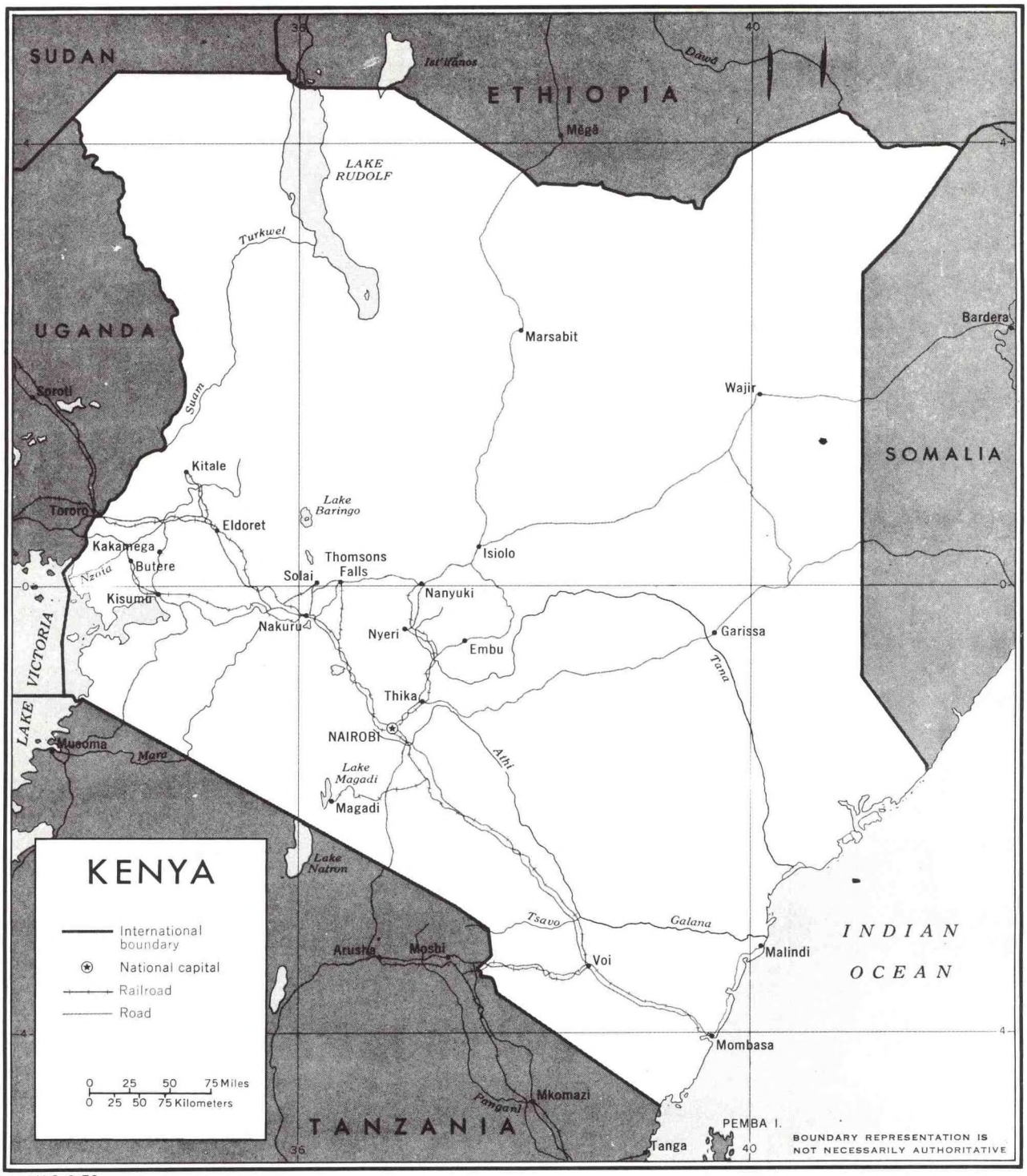

Figure 1.--Map of Kenya

I. INTRODUCTION

Kenya is a Texas-sized country of nearly 582,400 square kilometers (km^2). Lying between the Tropics of Capricorn and Cancer, and centered on the equator, it is a land of massive mountains and fertile valleys abundant in game, of ice-fed rivers and placid lakes, of white, palm-fringed beaches and extensive scrub plains. Kenya is as new as the ultramodern plazas of downtown Nairobi or as old as the site where the ancient Proconsul walked 25 million years ago.

Kenya lies on the east coast of Africa and is bordered on the north by Ethiopia and the Sudan, on the south by Tanzania, on the west by Uganda and Lake Victoria, and on the east by Somalia and the Indian Ocean (fig. 1).

The northern half of Kenya is arid and almost waterless. South of the winding Tana River, and along the coastline, the terrain is hot and humid, producing a lush, tropical environment. Mt. Kenya (5,200 meters (m)) is in the Aberdare Mountains and the Mau Escarpment of the Great Rift Valley. Mt. Kenya is the second highest mountain in Africa. High, sweeping plateaus from 900 to 3,000 m above sea level contain some of the most fertile soil found in all of Africa.

Under the leadership of President Mzee Jomo Kenyatta, Kenya has established itself as a model of moderation and free enterprise with warm relations with the Western world. Kenya's opposition to some of the policies of its neighbors--Tanzania and Uganda--recently led to the dissolution of the East African Community.

Kenya's 14 million population is a mixture of 52 different tribes (Kikuyo, Luo, Baluhya, Kamba, Kisii, and Meru being the most important) as well as Arabs, Asians, and Europeans.

II. FISHING GROUNDS

Kenya's Indian Ocean coastline is about 480 km long. The continental shelf is narrow, averaging about 5 km wide, except at the Kenya Bank (from Malinidi to Lamu) where the shelf extends seaward for about 48 km. Coral outcrops cover the ocean floor in many places and make bottom trawling difficult.

High-energy waves, sweeping across the Indian Ocean, produce strong currents and heavy surf along the entire coast. Outlying fringe reefs, however, provide some protection along many stretches of beach. When the monsoons hit the Kenya coast, however, fishing becomes impossible.

III. FISHERIES CATCH

In 1975, Kenya's fishermen caught over 27,000 metric tons (t) of fish, shellfish, and other aquatic products, valued at US$4.9 million (tables 1 and 2). Of this total, 22,810 t (or 83 percent) came from inland fisheries and the rest, 4,531 t (or 17 percent), came from the marine fisheries. In terms of value, however, the smaller marine catch was worth $1.6 million, or 33 percent of the total value.

Kenya's fisheries have peaked twice in the past 20 years: at 32,600 t in 1956 and at 33,700 t in 1970. In recent years, the catch has fluctuated between 27,000 t and 30,000 t, as is shown below in table 1.

Table 1.--Kenya Fisheries catch, 1955-75

Year	Catch
	Metric tons
1975	27,300
1974	29,400
1973	29,000
1972	30,000
1971	28,200
1970	33,700
1969	31,900
1968	28,100
1967	27,300
1966	27,900
1965	23,400
1964	20,700
1963	20,100
1962	18,400
1961	13,500
1960	12,600
1959	22,600
1958	22,000
1957	25,500
1956	32,600
1955	30,100

Sources: FAO, Yearbook of Fishery Statistics, 1974 and Republic of Kenya, Ministry of Tourism and Wildlife, Fisheries Department.

The large decrease in Kenya's catch after 1959 and through 1962 was due to restrictions placed on fishermen by the British administration during the insurgency period just before Kenya became independent on 12 December 1963.

Following independence, a period of friction with Somalia affected Kenya's northern border region; many fishermen were moved to safer areas during the conflict, resulting in lower marine catches. This era of strife appears to have been resolved, and normal fishing has been resumed along the entire coast.

Between 1970 and 1974, Kenya's inland fisheries catch increased from 20,851 t to 25,165 t. A setback to 22,810 t took place in 1975. Marine fisheries have declined from 8,023 t in 1970 to 4,531 t in 1975; decreased fish catches appear to be the greatest, but lower catches of lobster, shrimp, etc., are apparent. Table 2 (see next page) provides additional data on Kenya's fisheries catch for the years 1970 to 1975.

Table 2.--Kenya. Fisheries catch, by quantity (in metric tons) and value (in US$1,000), 1970-75

Fishery	1970		1971		1972		1973		1974		1975	
	Metric ton	US$1,000	Metric ton	US$1,000	Metric ton	US$1,000	Metric ton	US$1,000	Metric ton	US$1,000	Metric tons	US$1,000
Inland:												
Fish	20,851	2,900	21,129	2,700	22,086	2,800	24,898	3,336	25,165	3,806	22,810	3,268
Total	20,851	2,900	21,129	2,700	22,086	2,800	24,898	3,336	25,165	3,806	22,810	3,268
Marine:												
Fish	7,617	1,300	6,562	1,500	7,411	1,300	3,546	1,044	3,116	1,060	4,220	1,304
Lobster	83	64	145	121	80	88	63	72	58	80	57	78
Shrimp	69	32	124	75	83	66	131	97	50	42	49	32
Crab	11	2	15	4	12	3	15	4	13	6	18	9
Other	243	31	300	51	234	42	269	55	179	45	1/187	1/194
Total	8,023	1,429	7,146	1,751	7,820	1,499	4,024	1,272	3,416	1,233	4,531	1,617
Total	28,874	4,329	28,275	4,451	29,906	4,299	28,922	4,608	28,581	5,039	27,341	4,885

1/ Includes 111 t of bêche-de-mer worth US$184,000.
Note: Based on an exchange rate of 7.00 Kenya shillings to US$1.00.
Source: Republic of Kenya, Ministry of Tourism and Wildlife, Fisheries Department.

IV. ARTISANAL FISHERIES

A. Inland

Kenya's inland, or freshwater, fisheries have traditionally provided most of the nation's fish.

1. Lake fisheries - Kenya's many lakes supply most of the fish caught in Kenya. Gill nets account for about 90 percent of this fish; beach seines, longlines, mosquito net seines, and traps account for the remainder.

Lake Victoria is the largest lake in Africa and the third largest in the world (only the Caspian Sea and Lake Superior are larger). In 1973, this lake yielded 16,797 t of fish. According to Kenyan officials, 6,000 fishermen and 4,000 allied workers lived along the shores of the lake in 1968; they operated 3,500 canoes.

Lake Rudolf is 30 km wide, but stretches for about 240 km north toward Ethiopia. It yielded 4,927 t of fish in 1973. Turkana tribesmen use hand-held spears and wicker baskets to catch fish in Lake Rudolf, which is also a popular sports fish center.

Other lakes include: Lake Naivasha (62 t of fish in 1973), Lake Baringo (89 t in 1973), Lake Nakuru, Lake Hannington, and Lake Elmentaita (1,188 t of fish were caught in the last three lakes in 1973).

2. River fisheries - The Tana River, Kenya's largest and longest river, produces about half the fish caught in the country's many rivers and streams; 1,835 t of fish were caught by the river fishermen in 1973.

3. Fish ponds - No recent data are available on fish pond yields.

B. Marine

Kenya's marine, artisanal fisheries are centered around the following coastal ports: Kilifi, Lamu, Malindi, Mombasa, Mtwapa, Shimoni, and Vanga. In 1973, the fishermen from Lamu landed 1,126 t of fish and 69 t of crustaceans while fishermen from Mombasa landed 1,082 t of fish and 89 t of crustaceans out of a total marine catch of 3,416 t. In 1974 and 1975, these two ports again led the nation in fisheries landings, as shown below in table 3.

Table 3.--Kenya: Marine landings by port, 1974-75

Port	1974	1975
	-- Metric tons --	
Mombasa	936	1,078
Lamu	918	922
Malindi	403	387
Vanga	307	331
Shimoni	191	178
Kilifi	147	250
Others	203	248
Total	3,149	3,394

Source: Republic of Kenya, Ministry of Tourism and Wildlife, Fisheries Department.
Note: Landings by port figures are not identical with those shown in table 2. No reason has been given for these differences. The above-cited figures include landings made by commercial and sport fisheries.

Artisanal fishing is generally done from dugout canoes (called "ngalawas") or small dhows (called "jahazis"). Small outrigger canoes, with or without sails, are also used.

Various types of gear are used. Gillnets are common along the coast. Beach seines, which are as long as 65 m, are set in shallow waters and hauled

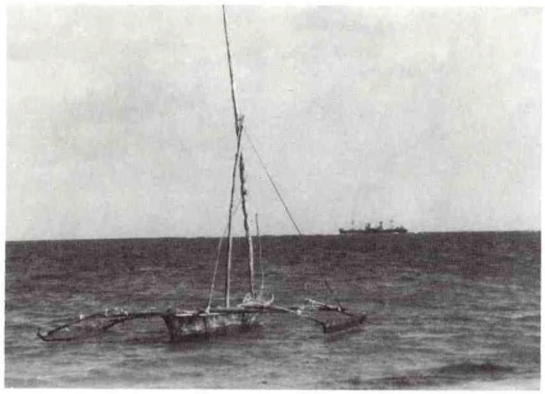

Photo 1.--An outrigger sailboat used for fishing. The outlying reef system is visible just below the freighter that is waiting to enter Mombasa Harbor.

in by as many as 15 people. Brush leadtraps[1] and fish weirs are set up along the beaches and in the lagoons and rivers leading to the ocean. Trammel nets and wooden traps are used to harvest lobsters. Artisanal fishermen also use nylon handlines baited with squid. Finally, free divers[2] collect various forms of marine life from the ocean.

According to the staff of the Fisheries Department, the main problem facing Kenya's fishermen is their general unwillingness to adopt new methods of fishing and new types of fishing gear. The Department's Mombasa Station officials are working slowly and patiently to convert these fishermen to more modern methods. Much of this effort to date has been centered around establishing fishery cooperatives where training has shown some results.

V. COMMERCIAL FISHERIES

A. General

Mr. Peter N. Kamande, Assistant Director of the Fisheries Department, recently indicated to National Marine Fisheries Service officials that Kenya is likely to declare the extension of the exclusive economic zone to 200 nautical miles. The departure of foreign tuna vessels--and two Japanese shrimp trawlers--from Kenya together with new fishing limits has placed an added incentive on Kenya's fishermen to develop their fishery resources.

1/ A 'brush lead trap' is an arrangement of brush, placed in the water, which is used to trap fish. The fish can swim into the "V" shaped trap, but the brush--or branches--prevents them from swimming out.

2/ A 'free diver' does not have a helmet with an air hose connecting him to the surface. It is simply a diver who swims down to the bottom wearing only goggles.

As a first step in developing Kenya's own coastal fishing fleet, the Fisheries Department in 1976 ordered a 300-GRT stern trawler to be built by the BU Sleephelling Maatschappij of Scheveningen, the Netherlands. The vessel will be 40.55 m long, will have a 1,400-hp engine capable of reaching a speed of 12 knots, will have a 230 cubic meter hold, and will be equipped for midwater and bottom trawling. The vessel should be delivered in December 1977.

B. Kenya Fishing Industries Ltd.

Kenya Fishing Industries Ltd. (KFI), in Mombasa, is the only firm in Kenya presently engaged in commercial fishing. The firm's principal activity is storing and transshipping frozen tuna, but it also catches, processes, and exports shrimp.

KFI was established in 1970 as a joint venture of the Government of Kenya through its Industrial and Commercial Development Corporation (33 percent ownership), the Taiyo Fishing Company (20 percent) and the Ataka and Company (20 percent)--both firms are Japanese--and the Maritime Company of East Africa Ltd. (22 percent). Individual Kenyans own the remaining 5 percent of the company.

KFI operates a modern complex in Mombasa next to the Fisheries Department's Mombasa Station. The plant is also quite close to the Outrigger Hotel, a spacious, clean, and well-managed, modern hotel that provides comfortable accommodations to crewmen of vessels bunkering at KFI facilities.

Mr. A. Mbwana, a young and aggressive Kenyan, is the general manager of KFI. He works with Captain Y. Sakamoto, who is both a director of KFI and a representative of the Taiyo Fishing Company in Kenya.

Photo 2.--Mr. Mbwana and Captain Sakamoto in front of the KFI complex in Mombasa.

KFI has a two-room, cold-storage facility with a total area of 1,115 m^2 (12,000 ft^2). Two 100-hp Mayekawa[3] ammonia compressors provide

3/ Mention of trade names does not imply endorsement of commercial products by the National Marine Fisheries Service, NOAA, U.S. Department of Commerce.

the freezing capacity, which can accommodate a maximum of 2,000 t of frozen fish at -40°C (the rooms are normally kept at -36°C). The freezing operation is run by remote control from a separate building that houses the main offices.

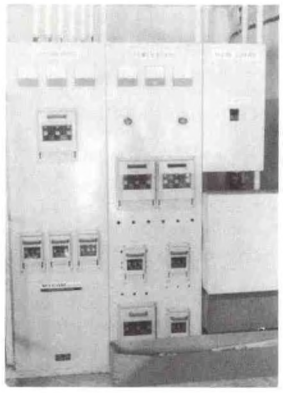

Photo 3.--Control panel for KFI's cold stores.

KFI has a 110-m (360-ft), T-shaped jetty that can accomodate vessels with a 6.9-m draft.

Photo 4.--View of KFI's dock area and conveyor belt system. A ship repair facility is visible to the left of the main freezing plant.

The stem of the jetty leads directly into the handling and weighing rooms next to the freezers. A fixed conveyor belt 38 m long connects the pier to the plant; the conveyor can move 30 t of fish per hour from the offloading vessels into the plant.

KFI also owns a customs-bonded warehouse,[4/] a bunkering facility consisting of two Caltex fuel storage tanks, and a small ship repair yard, which it leases to a private company.

4/ A "customs-bonded warehouse" is a warehouse where fishing gear, spare parts, etc., can be stored without paying import taxes. These goods are used to repair ocean-going fishing vessels and are not used inside the country. As a result, no Kenyan taxes need to be paid. This system is used to attract foreign fishing vessels that require servicing.

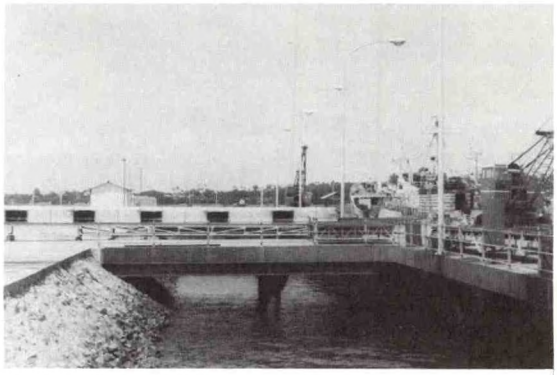

Photo 5.--The KFI conveyor belt leads from the pier directly into the freezing rooms of the cold storage plant. Nearby fuel tanks enable vessels to refuel at the pier.

Since KFI was established it obtained all of its frozen tuna from foreign fishermen. In 1972 and 1973, 20 Republic of Korea (ROK) and 15 Taiwanese longliners supplied KFI with frozen tuna and allied species. By mid-1974, the South Koreans had 40 longliners operating from Mombasa, but the drop in world tuna prices led to a withdrawal of the ROK fleet in September 1974. In July 1975, there were seven ROK longliners fishing from Mombasa, but this number was expected to increase as world tuna prices began to increase. The Taiwanese left Mombasa in the winter of 1974 and had not returned by July 1975. For additional details on the ROK tuna fleet and fisheries off Kenya see page 6.

In 1972, foreign-flag vessels delivered 7,441 t of tuna and allied species to KFI facilities. In 1973, a total of 6,942 t of frozen fish was delivered; in 1974, as much as 7,493 t of frozen fish was unloaded. Landing data for the first 6 months of 1975 suggests that the firm received 3,905 t of frozen tuna, allied species, and shrimp; this figure almost certainly includes fish landed in 1974. (See the appendices for landings and export statistics).

In addition to its heavy involvement in transshipping tuna and allied species, KFI also caught and processed its own shrimp for export and domestic sales. In 1973, Taiyo sent two 30-GRT shrimp trawlers, both named Taiko Maru, to Mombasa. The vessels caught 140 t of headless shrimp in 1973; no landing statistics for 1974to 1975 are available. The vessels averaged 2 to 3 weeks at sea per trip. according to A. Mbwana. During the shrimp fishing season (September through April), each vessel averaged about 150 kg of headless shrimp per day. The catch was separated into five sizes for white shrimp and four sizes for tiger shrimp. The catch was then headed and frozen (shell-on) in 2-kg boxes. Twenty percent of the catch was sold locally; the rest was exported, primarily to Japan. Small incidental catches of fish were sold locally. Each vessel had a Japanese captain, engineer, and a master fisherman; four Kenyans were employed as

crew. The trawlers fished in Formosa Bay between Malindi and Lamu. According to Captain Sakamoto, the vessels were not catching at their maximum capacity because the shrimp resource was limited.

The Japanese reportedly withdrew their two shrimpers in 1976. As a result, KFI's supply of crustaceans has been severely reduced. To stay in business, KFI purchased a secondhand trawler, 13 m long, from India, which is now fishing with an Indian captain and a Kenyan crew. KFI expects this trawler to catch about 2 to 3 t of shrimp per month and plans to start training the crew in lobster fishing for higher profits. KFI eventually plans to purchase as many as three additional trawlers.

Table 4 provides data on Kenya's landings of shellfish in 1975, which give the reader some indication of the size and location of the shellfish resource in local waters. These statistics, however, do not include catches made by commercial fishing vessels and are all, presumably, made only by artisanal fishermen.

Table 4.--Kenya. Landings of shellfish by ports, 1975

Port	Spiny lobster	Shrimp	Crabs	Total
	----------Metric tons----------			
Lamu	34	13	1	48
Malindi	4	9	3	16
Kilifi	5	3	2	10
Mtwapa	-	-	-	-
Mombasa	8	13	3	24
Shimoni	1	-	1	2
Vanga	2	6	4	12
Other	3	5	4	12
Total	57	49	18	124

Source: Government of Kenya.

KFI would consider establishing a joint venture with U.S. fishery firms to fish for shrimp in local waters. Interested firms may wish to write to the company at P.O. Box 84566, Mombasa, Kenya.

C. Samaki Industries (Kenya) Ltd.

Samaki Industries (Kenya) Ltd. is a small import-export firm headquartered in Nairobi. The firm has a cold-storage facility in Nairobi and a processing plant in Mombasa. Samaki (which means "fish" in Swahili) imports lobster from Somalia and shrimp from Tanzania. It does most of its business between September and April; after that, supplies wane. The company has a 2-kg export pack of block-frozen, shell-on, headless shrimp. Eight boxes are packed in a waxed master carton. Large-sized tiger shrimp and medium- and small-sized shrimp are exported; prices in 1975 varied from $6.50/kg ($2.95/lb) for the larger sizes to $3.00/kg ($1.36/lb) for the small-sized shrimp.

The firm also exports individually frozen, poly-packed, whole lobsters in 14-kg master cartons priced at $4.00/kg ($1.81/lb) in 1975. Lobster tails come in assorted sizes and are packed in 3-kg boxes with 3 boxes to a master carton; the price for tails averaged about $9.00/kg ($4.08/lb) in 1975. The firm requires a minimum order of 500 kg, and all prices are ex-depot in Nairobi.

Janmohamed H.S. Verjee is Managing Director of Samaki; the address is P.O. Box 41218, Nairobi, Kenya.

D. Kenya Inshore Fisheries Ltd.

Kenya Inshore Fisheries Ltd. (KIF), formerly the largest fishing company in Kenya, is no longer operating. According to Norbert Odero, Director of Fisheries, KIF went out of business because of mismanagement.

KIF began operations on 24 June 1966. At its peak, it had a cold-storage plant in Mombasa, five fish collecting boats, two fishing boats, and a freezer vessel named the Menikaz. It had also chartered two reefers, including the M/V Salama, to carry fish from Lamu to Mombasa.

KIF was set up by the Kenya Government (51 percent) and the Ross Group (International) Ltd. of the United Kingdom (49 percent). The firm was given a 5-year monopoly for the purchase and marketing of shrimp, lobster, crabs, and any other shellfish. KIF was given this monopoly by the government in an attempt to break the hold of Arab traders whose domination of the local fishermen had broken their incentive to harvest shellfish. On 16 May 1970, the firm lost its monopoly status and went out of business shortly thereafter.

VI. SPORT FISHING

Kenya's sport fisheries have always played an important part, both at present and during the British administration, in the nation's fisheries. It is interesting to note that Prince Philip broke the news of the death of King George to Princess Elizabeth while the future Queen was fishing at the Sagana State Lodge.

Kenya is a land of high mountains, and ice-fed rivers abound in the highlands. The first British settlers in this region became avid fishermen, and it did not take them long to import trout from Scotland and stock many Kenyan rivers and streams.

The keen interest of British anglers ensured the development of Kenya's sport fisheries, while other fisheries languished. Since independence, sport fishing has provided the economy with an important tourist trade.

Both freshwater and marine fisheries attract thousands of tourists annually, and hotels and newspapers advertise both deep-sea and inland fishing parties and tours.

A large variety of game fish are found in Kenyan waters, including trout, bass, and giant

Nile perch in the freshwater fisheries and marlin, tunas, mackerels, etc., in the marine fisheries. Table 5 provides data on the marine sport fish catch, by species, in 1972 and 1973.

Table 5.--Kenya. Marine sport fish catch, 1973-74

Species	1972	1973
	---Kilograms---	
Tuna and bonito	24,467	20,424
Sailfish	22,909	18,433
Marlin	21,233	7,374
Kingfish and wahoo	7,656	13,258
Shark	3,224	4,404
Dolphin	2,991	-
Barracuda	1,072	-
Black and rainbow runner	996	438
Other gamefish	21,351	24,530
Total	105,899	88,861

Source: Ministry of Tourism and Wildlife, Department of Fisheries.

Many fishermen who operate charter boats in Kenya report that both the quantity of sport fish caught and the individual sizes of fish have decreased in recent years. Many blame the Japanese, South Koreans, and Taiwanese for this decline in catches. The Kenya Government felt strongly enough about this decrease to raise the point during the Indian Ocean Fishery Commission meetings held in Mombasa in 1975. Good game catches bring in tourists, and Kenya wants them to keep coming.

VII. FOREIGN TUNA FISHING OFF KENYA

The Republic of Korea (ROK) operated seven tuna longliners out of Mombasa that were owned by three fishing companies in 1975: Oyang Fisheries Company, Indian Ocean Company, and Nam Pyund Fisheries Company.

The Oyang Fisheries Company operated the largest fleet: four longliners named Oyang No. 7, 17, 37, and 38. Three of these vessels are 49 m long, 250 GRT, and have a 170-t, cold-storage plant. The vessels have 750-hp diesel engines.

Photo 6.--The ROK longliner Oyang No. 38.

The Oyang No. 38, pictured below, was built in Japan by the Niigata Shipyards in mid-1967; it was formerly named Naikai Maru No. 38 and was bought from Japan in 1973. The Oyang No. 37, unlike her three sister ships, is 54 m. long. Each of the vessels fish with a 23-man crew, serving at sea for 30 months before being rotated back to Korea. The company also owns six additional longliners and three stern trawlers.

The Indian Ocean Company was established in 1968 and operated six longliners out of St. Martin, Leeward Islands; one out of Pusan, Korea; and two out of Mombasa in July 1975. The two vessels that fished out of Mombasa were the Indian No. 11 and No. 18.

Photo 7.--ROK Fishery Attache, Hoe Cheon Kim, in front of the Indian No. 11. Kim was the ROK delegate at the Indian Ocean Fisheries Commission meeting in Mombasa. He is based in Abidjan, Ivory Coast.

Each vessel is 54 m long, 324 GRT, and has a 230-t, cold-storage hold. Each is equipped with a 900-hp Akasaka diesel engine.

According to the captain of the Indian No. 11, the vessel was built by the Kaneshashi Shipbuilding Company of Japan in 1964 as the Jenko Maru No. 38. The vessel was bought from Japan in 1969 and arrived in Mombasa with her sister ship in April 1974.

The two vessels purchased fuel from KFI at $113 per ton in 1975. Each vessel holds 280 t of fuel, permitting it to operate for about 4 months with a cruising speed of 10 knots.

The last ROK vessel operating out of Mombassa (as of July 1975) was the Nam Pyund No. 7, a 49-m long vessel owned by the Nam Pyund Fisheries Company of Korea.

All three of the firms sold all of their catch directly to KFI. In April 1975, according to the captain of the Indian No. 11, the Korean company was being paid $490/t for albacore and $560/t for yellowfin. By July 1975, the price for albacore had risen to $700/t and the price for yellowfin to 600/t. Billfish was selling for $300/t.

The ROK vessels fished mostly in two areas in 1975: yellowfin was sought mainly to the east of Mombasa as far as the Seychelle Islands to the north of Madagascar, and albacore was caught to the south of Madagascar and to the east of South Africa. The captain of the Indian No. 11 said that his longliner was averaging 1.0 t of yellowfin and 1.5 t of albacore per day. It was also catching between 0.5 t and 1.0 t of miscellaneous billfish, sharks, etc., for a total daily catch of 3.0 t to 3.5 t.

Foreign tuna fleets apparently pulled out of their base in Mombasa in 1976, primarily owing to increased operational costs. There have been no recent reports of renewed fishing from Mombasa by the Japanese, South Koreans, or Taiwanese.

VIII. FISH MARKETING

Three factors affect the marketing of fish in Kenya: traditional consumer preferences, lack of refrigeration, and resulting limited demand.

A. Refrigeration

With a few exceptions, all of Kenya's landing sites lack refrigerated facilities. Refrigerated transportation is also lacking, and when available, tends to be expensive. Finally, few retail stores have modern refrigerated display cases for their fishery products. Fishing villages tend to have an abundant supply of fish, while only premium fish are shipped to more distant markets.

In discussions with the Hilton Hotel's director of food and beverage and with the hotel's chef, it was learned that the hotel generally can obtain all the fish it needs at reasonable prices, but that transporting the fish to Nairobi was a problem. The hotel, for example, was receiving its shipments of marine fish via railway, truck, or even by small taxis driving to Nairobi from the port at Mombasa; the trip usually takes from 8 to 12 hours depending on road conditions. On some days, the fish arrives well iced, and on other days, without ice. The marine fish purchased by the hotel was almost never delivered frozen.

The Fisheries Department, aware of the limitations imposed by lack of refrigerated facilities on development of the country's fisheries, is actively trying to overcome this problem. Unless freezer facilities can be made available at landing sites, local fishermen will be forced to sell at lower prices, thus discouraging them from increasing their catches. The Department has been installing freezer facilities at major landing sites and plans to continue this program.

B. Consumer preferences

In discussions with many Kenyans, including the Director of Fisheries, one gains the impression that fish is not considered an item of widespread appeal. Kenya is well supplied with a variety of meat, poultry, vegetables, and fruit crops. People are usually well fed and can even afford to be somewhat selective in their purchases. Although fish is eaten at home, most Kenyans said they would not serve fish to a guest; beef or poultry would be served. Beef is especially abundant in Kenya and is considered the luxury food. In driving through the Kenyan countryside, one is struck by the hundreds of small stalls selling beef almost as much as one is struck by the general absence of fish stalls.

Photo 8.--A typical small-scale meat store in Mombasa, Kenya.

With beef widely preferred, with other foods readily available, and given the lack of refrigeration, it is not surprising there is not a lively trade in fishery commodities.

Most Kenyans distrust frozen fish and will not buy it even when it is available. The fish must be defrosted before it can be sold. The explanation for this attitude apparently involves freshness: if it looks and smells fresh, then it must be fresh. By the same token, if it is frozen, then someone might be trying to sell a poor-quality fish by masking its appearance, texture, or smell. Although this reasoning does not make sense in a technological society, it does make sense in a country where fish can and does spoil easily under a hot tropical sun. Anything that does not meet the freshness requirements of the consumer is immediately suspect. Fortunately, this situation can be corrected through educational campaigns.

Another consumer preference is that most Kenyans--like most Africans--require that whole fish be sold, including the guts. This might also appear unusual, but it again relates to freshness. Traditionally, freshly caught fish is sold the same day; there is no need to gut the fish because it has just been caught. Therefore, fish without guts--so the logic goes--must be suspect because the fish "obviously" had not been sold immediately and it must, "therefore" be bad.

The Fisheries Department is working to overcome some of this consumer resistance by sponsoring "eat fish" campaigns. The department has a special truck that tours various towns and villages giving demonstrations on how to prepare and

cook fish.

Photo 9.--The Fisheries Department truck that is used to promote fish consumption in Kenya.

The department is also working to introduce fishery products into institutions feeding large numbers of people. The department's educational efforts will, given time, eventually help alter the Kenyan consumer's eating habits.

C. Markets

Most fish markets in Kenya are close to the fishing grounds, and fish is sold by small-shop owners usually occupying a particular area of a larger market place. The same is true in more distant towns or cities where sales are made primarily to Kenyan citizens. In larger cities with a European population, there are small shops that specialize in fish for European homes; these shops do use refrigerated equipment to keep and display their products. Marine and inland fish species are usually available.

The Hilton Hotel in Nairobi obtains regular shipments of shrimp, lobsters, crabs, oysters, tuna, kingfish, lemon sole, and octopus from Mombasa. All are delivered whole. The hotel also buys Nile perch and tilapia fillets on an irregular basis. According to the Hilton's chef, tilapia fillets have become difficult to find because it is easier to sell the whole fish than its fillets. The hotel also has a supplier of rainbow trout (sold frozen and whole). This supplier, a Dane, raises trout about 160 km outside of Nairobi. His product is excellent and is served aboard airlines that receive catering services at Nairobi airport.

D. Prices

Fish prices in Nairobi in mid-1975 were generally competitive with beef prices: $1.57 to $2.00 per kilogram for fish sold in shops specializing in the European trade. These prices are slightly less than for most cuts of higher grade beef.

E. Cooperatives

The establishment of fishermen's cooperatives has substantially improved fish marketing in Kenya.

For generations marine fishermen were victims of a "Tajiri" 5/ system of binding patronage kept alive by Arab traders. Basically, Arab traders along the coast would provide local fishermen with high-interest loans to help tide them over slack fishing periods in exchange for exclusive supplies of fish. Formerly, the fisherman could always count on the local trader to keep him going. But when fishing was good, the fisherman still had little incentive to work hard because he owed all of his catch to the trader and could never work his way out of debt.

When Kenya gained its independence, the Government launched a two-pronged attack designed to destroy the Tajiri system. It gave monopoly fishing rights for crustaceans to the Kenya Inshore Fisheries Ltd which took Kenya's crustacean fisheries away from the traders and placed them under control of the Kenya Government, which owned 51 percent of KIF. Although the firm eventually went out of business, it did, during its lifetime help eliminate the role of the trader in the crustacean fisheries.

The government next established a government-controlled fish auction market at Malindi. The auction system, however, proved to be short lived. According to the Director of Kenya's Fisheries, the Arab traders quickly banded together and artificially raised prices so high that few outsiders could compete in the bidding; when the competitors gave up in despair, the Arab traders lowered their prices until the fishermen lost interest in the auction project.

To fight this tactic, the Kenya Government established fishery cooperatives and helped them by building cold-storage facilities. The tactic has worked well in Lamu where fishermen can now store their catch if prices are too low; when prices increase they can sell their catch. According to Mr. Odero, the system is working so well that more facilities will be built in the future.

IX. FISHERIES ADMINISTRATION

The development of Kenya's commercial fisheries has been hindered by several unique circumstances. The most important factors are tourism and sport fishing, combined with a lack of interest by the British during their rule in Kenya.

A. British administration

As noted earlier, Kenya's marine and inland waters provided British settlers with a bountiful harvest of game fish. The British, known as keen sport fishermen, were quick to recognize the need

5/ "Tijara" in Arabic means commerce or business; "tajiri" means a businessman or a rich man.

for regulating and replenishing the inland waters so that sport fishing could continue. As it developed, Kenya's sport fisheries became important to the country; commercial fisheries, however, were largely ignored until the 1950's when a belated effort was made by the British to develop them. When independence came, a cadre of trained personnel and an interest in commercial fisheries was, by and large, sadly lacking in the new republic.

B. The Ministry for Tourism and Wildlife

Following national independence, the Ministry for Tourism and Wildlife was given responsibility for developing Kenya's fisheries. As implied by its name, the Ministry is charged primarily with developing tourism and preserving wildlife. Kenya's economy depends heavily on a thriving tourist trade, and many tourists--if not all--come to Kenya to see the marvelous wildlife reserves. The Ministry is understandably committed to preserving the wildlife reserves to continue attracting tourists. Fisheries, in a country where food is plentiful and where fish is not overly popular, do not receive priority attention.

What does attract attention, however, is sport fishing. The government is anxious to promote and develop both inland and marine sport fisheries. Rainbow trout, Nile perch, marlin, and swordfish attract wealthy tourists; these tourists use local hotels, transportation, food, etc. Hard foreign currency is earned; a dollar spent on improving trout resources may result in a return of several thousands of dollars in airfares, hotel bills, transporation, food, souvenirs, tips, etc. On the other hand, a dollar spent on developing commercial fisheries for local consumption may result in only a few dollars being returned to the economy.

There are signs, however, that this situation may change. The Minister for Tourism and Wildlife, Mathews J. Ogutu, M.P., in addressing the opening session of the Fourth Indian Ocean Fisheries Committee in Mombasa on 21 July 1975, spoke of the need to increase Kenya's fisheries catch.

C. Fisheries Department

The Fisheries Department is headquartered in several temporary buildings in Nairobi (photo 10). The staff expects to find permanent office facilities in the near future.

The Fisheries Department has three major administrative sections: Inland Production, Marine Production, and Research and Development. The Department employs 400 people including 40 biologists. Three-fourths of the staff is involved with freshwater fisheries and the rest with marine fisheries.

The Coast Province Station in Mombasa, headed by P.N. Kamande, Assistant Director of Fisheries, deals with marine fisheries. His staff is responsible for conducting biological and exploratory research, collecting statistics, and improving fish handling and processing.

Photo 10.--Entrance to the Fisheries Department headquarters in Nairobi.

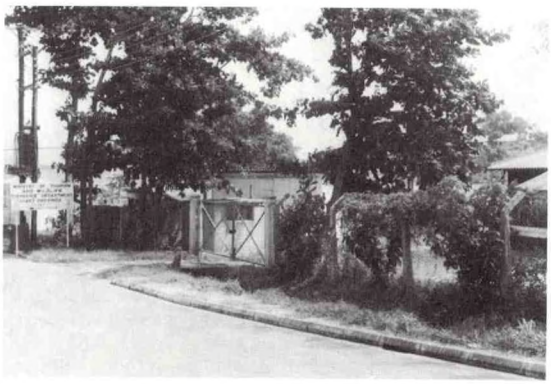

Photo 11.--The Coast Province Station in Mombasa is next door to the KFI facilities.

To conduct exploratory fishing, the Mombasa Station has a 60-GRT, 54-m long stern trawler, the Shakwe.

Proto 12.--The Kenyan research ship, Shakwe.

This research vessel was built in 1969 by the African Marine and General Engineering Co. Ltd.

The Shakwe's crew (the name means "seagull" in Swahili) includes 2 scientists and 12 men. They are able to conduct exploratory trawling and can also measure sea currents, temperatures, salinity, and wind velocity. The vessel also has been used for longlining. It does not have freezing facilities.

X. FISHERIES RESEARCH

The East African Marine Fisheries Research Organization (EAMFRO) used to be responsible for all marine research in East African waters. It was headquartered on the island of Zanzibar off the coast of Tanzania. In recent months, however, the East African community (Kenya, Tanzania, and Uganda) has broken apart. The facilities in Kenya presumably now have been taken over by the Kenya Government.

The East African Freshwater Fisheries Research Organization (EAFFRO) likewise, used to be responsible for all freshwater research in East Africa; it too is no longer in operation.

The United Nations Development Program/Food and Agriculture Organization (UNDP/FAO) has a Lake Victoria Fisheries Research Project in Jinja, Uganda, that conducts research on freshwater fisheries. It also, in conjunction with the Institute of Marine Research of Norway, maintains 3 scientists, one instrument chief, one instrument technician, and 4 national scientists in Mombasa.

The Norwegians, using the R/V Dr. Fridtjof Nansen, a 490-GRT advanced fishery research ship, in July 1975 completed a study of Kenyan and Somali waters under the sponsorship of the UNDP/FAO Indian Ocean Survey and Development Program.

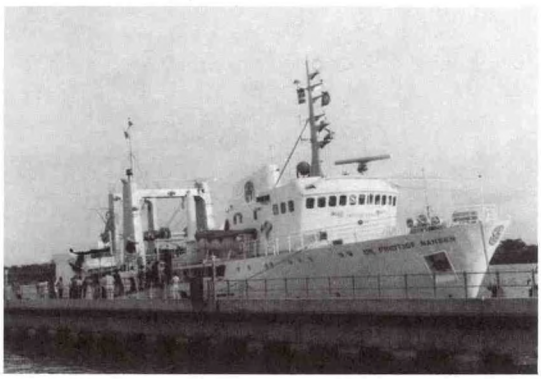

Photo 13.--The Dr. Fridtjof Nansen in Mombasa being visited by delegates from the Indian Ocean Fisheries Committee.

The vessel, owned by the Norwegian Agency for International Development (NORAD), was operating out of Mombasa under direction of the Institute of Marine Research of the Norwegian Directorate of Fisheries. While off Kenya, the vessel surveyed fish resources and performed exploratory fishing with pelagic and bottom trawls, purse seines, and other gear. The results of the survey will be published by the FAO in Rome.

In December 1975, UNDP/FAO sponsored a project aimed at determining the fishery resources of eastern Africa from the equator to 26° S. The Soviet Union's Fisheries Ministry was contacted and agreed to charter one of its research vessels; costs were to be paid out of the UNDP ruble fund.

The Professor Mesyatsev arrived shortly thereafter to begin a 1-year research cruise off the coasts of Somalia, Kenya, Tanzania, Mozambique, Mauritius, and Madagascar. Four cruises were planned, each lasting 75 days. The Soviet crew was comprised of 23 scientists and 65 crewmen; they were to be rotated after 6 months. It was planned to fly them to the USSR from one of the East African ports where Aeroflot has landing privileges.

UNDP/FAO demanded that a qualified international scientist head the cruises and the project, and, after some resistance, the Soviets consented. It was also arranged for three or four marine biologists and/or oceanographers from the various African countries to participate in each cruise to receive practical training.

The vessel was to survey stocks of small pelagic fish schooling in the surface layers down to 20 m as well as bottomfish stocks down to 300 m. Purse seining was to be used for pelagic surveys; acoustic soundings were also to be made. The landings were to be processed aboard the ship and their value applied to reduce the Soviet costs, completely or in part.

In August 1976, during the third of the four planned research cruises, one of the boilers blew up, killing two Soviet sailors. The vessel was given permission for an emergency call at Diego-Suarez in nothern Madagascar. The scientific party and most of the sailors went home; as of December 1976, the vessel was still undergoing repairs at Diego-Suarez.

Preliminary analysis of the cruise data by FAO suggests that there are no commercially significant concentrations of fish found during the first three cruises.

The University of Nairobi also conducts fisheries research. At the present time, inland fisheries, especially tilapia, are studied by Dr. M. Hyder, Tilapia Research Unit at the University. Limited studies on marine seaweeds are also under taken. Some work is also being done by consultants on marine turtles and crocodiles.

The University has a piece of property 13 km south of Mombasa, called the Diani Beach Research Station where graduate students make field studies. The University hopes to expand this program in the near future.

XI. CONSERVATION

Conservation of marine or aquatic resources is not a major issue in Kenya at the present time. The Kenya Government, however, has taken steps in the past to ensure that endangered resources are protected, and it has acted to control abuses before they have become serious. The use of dynamite in fisheries, for example, is not a problem in Kenyan waters, although it has been reported as such in neighboring states. The Government is concerned about the decline in the marine sport fish catch and is also worried about the dangers posed by offshore oil spills by passing tankers.

One of the first steps taken by the Government of Kenya in the field of conservation was establishment of the Marine National Park near Malindi. The goal was to preserve the beauty of the coral reefs and to stop the taking of exotic reeffishes and coral by anglers and collectors.

The government also has received support from the East African Wildlife Society, a nonprofit organization devoted primarily to conserving animal resources. The Society, working closely with the Kenya Government, has taken some steps to protect marine life. For example, it has succeeded in limiting the sales of live tropical reeffish to the Federal Republic of Germany and is now working with the World Wildlife Fund to protect bêche-de-mer, sea turtles, and sea cows. The Society also is attempting to halt the collection and sale of coral and shells; generally only small-scale street vendors ply this trade.

The Society is now trying to outlaw the use of gas-powered spear guns in the coral reefs and plans to investigate the possibility of establishing a closed season for spiny lobsters. It is also funding research into Kenya's sea turtle populations.

According to Michael J. Sawyer, Executive Secretary of the Society, the Government of Kenya has proven quite responsive toward conservation problems. Sawyer says the two main problems facing Kenya in the field of conservation are funding and manpower; there are not enough trained men to enforce existing laws, and funds are urgently needed in other fields.

The Society hopes to take a bigger role in marine conservation. As a nonprofit organization, however, it relies heavily on public support for its programs. The address of the Society is East African Wild Life Society, P.O. Box 20110, Nairobi, Kenya.

XIII. FISHERIES TRADE

Kenya's balance of trade in fishery products is weighed in favor of imports; between 1970 and 1975 (except for 1972) imports exceeded exports in both quantity and value. In 1975, Kenya imported 2,431 t of fishery products, worth $1.8 million compared with exports of 1,119 t, worth $1.0 million. Kenya's imports and exports from 1970 to1975 are shown in appendices D, E, F, and G.

A. Imports

Kenya imports rather large quantities of salted, dried, or smoked fish. Fish meal and fish oils formerly were the nation's second most important import in terms of quantity, but in 1975 became first in importance. Most fishery imports come from neighboring Uganda and Tanzania. Kenya's fishery imports from the United States are insignificant. Statistics on Kenya's imports of fishery products by country and product are shown in appendix F.

B. Exports

Kenya's exports of fishery products depend heavily on the sale of salted, dried, or smoked fish to Uganda. Some fresh or frozen fish are also exported to Uganda, but most of these products are exported to other countries. In 1975, Kenya listed exports of 61 t of crustaceans and mollusks for delivery to nations outside East Africa. Appendix G provides additional details. Kenya's exports of shrimp to Japan in 1975 equaled 42.6 t, valued at $204,400. These exports have been increasing rapidly during the last 3 years (appendix H).

In 1975, Kenya exported to the United States 236.8 t (522,000 lb) of albacore, valued at US $234,900. Exports of other fishery products to the United States were small (appendix I). Kenya's total 1975 fishery exports to the United States decreased significantly from the previous year (by over 800 percent). The decline was mainly owing to smaller tuna exports. Rock lobster tail exports were also reduced considerably.

XIII. BUSINESS OPPORTUNITIES

Business opportunities in Kenya appear rather limited. Shrimp fishing for inshore species is fully and efficiently managed by KFI. Additionally, owing to a slack in the world tuna market in 1975, the KFI freezer facility was not being used to capacity. There is a potential for snapper fishing, but details on the potential have not yet been released by FAO.

A potential market does exist for small craft and refrigerated facilities (ice-making machines, small freezer facilities, refrigerated trucks, and retail refrigerators and display cases). There are also sales opportunities for exports of sport fishing gear and equipment, although many shops already sell this type of equipment.

The best area for potential development appears to be in freshwater fish culture. Establishment of joint ventures in trout culture or other high-priced fish could be considered. Additionally, the country could use equipment specifically designed for fish hatcheries, although this market is still rather limited.

Photo 14.--Tilapia being raised in a small-scale fish culture project operated by the owner of the Bamburi Cement Plant in Mombasa.

Individuals wishing to investigate the market in Kenya should write to the Director of Fisheries, Fisheries Department, Ministry of Tourism and Wildlife, P.O. Box 40241, Nairobi, Kenya as well as to the Economic/Commercial Officer, Embassy of the United States of America, P.O. Box 30137, Cotts House, Wabera Street, Nairobi, Kenya.

XIV. ACKNOWLEDGMENTS

It was difficult to obtain complete and accurate data for all sectors of Kenyan fisheries; this was especially true for statistical data. I appreciate the efforts made by the staff of the Kenyan Fisheries Department in obtaining whatever data were available and for its efforts in arranging field trips. Special thanks are extended to Norbert Odero, Director of Fisheries, for the time spent with me during the hectic days of the Indian Ocean Fisheries Commission meetings which he chaired; to Syed M.A. Shah and Benson M. Ogilo of the Mombassa Biological Station for their assistance in arranging trips; and to Paul Kongere, in Nairobi, for obtaining statistics for this report. In addition, I greatly appreciate the careful work of Yolanda Francis and Bernice Grant in the typing of this report.

Appendix A.--Kenya. Cold stores of tuna and allied species landed at Kenya Fishing Industries Ltd. in Mombasa by foreign tuna longliners, 1973

Species	January	February	March	April	May	June	6-month subtotals
	Kilograms						
Albacore	59,818.1	1,011.7	55,875.1	59,896.7	84,832.7	27,167.5	288,601.8
Bigeye tuna	220,884.4	87,640.0	164,324.9	98,809.3	-	26,784.2	598,442.8
Bluefin tuna	-	-	-	-	-	-	-
Yellowfin tuna	653,762.6	27,497.4	274,687.0	531,256.7	301,688.2	98,410.6	1,887,302.5
Black marlin	22,543.3	1,654.0	20,856.8	46,803.7	20,293.0	7,290.2	119,441.0
White marlin	12,561.9	451.3	6,944.7	13,407.5	10,389.8	2,169.0	45,924.2
Blue marlin	-	-	-	-	-	-	-
Striped marlin	-	-	-	-	-	-	-
Red marlin	22,663.6	2,311.9	10,450.0	18,597.7	7,141.7	4,965.4	66,130.3
Sailfish	24,950.7	3,630.4	17,514.9	29,406.9	11,791.7	4,494.6	91,789.2
Skipjack	-	-	-	-	-	-	-
Swordfish	20,140.4	1,639.7	13,007.3	7,963.5	12,483.1	9,425.6	64,659.6
Shark	20,788.5	5,537.5	21,378.2	22,788.0	22,260.7	7,232.5	99,985.4
Moro	2,661.3	4,082.4	18,101.6	39,632.8	11,856.1	2,750.7	79,084.9
Others	56,688.8	8,525.3	37,301.6	39,120.0	25,837.9	7,810.1	175,283.7
Total	1,117,463.6	143,981.6	640,442.1	907,682.8	508,574.9	198,500.4	3,516,645.4

Appendix A.--Continued

Species	July	August	September	October	November	December	6-month subtotals
	Kilograms						
Albacore	192,219.0	578,952.2	367,036.7	185,294.9	368,950.0	190,580.4	1,883,033.2
Bigeye tuna	58,825.9	100,550.3	37,950.2	21,945.8	128,160.0	114,454.5	461,886.7
Bluefin tuna	1,194.0	3,800.4	-	-	-	-	4,994.4
Yellowfin tuna	51,146.7	201,161.8	74,948.0	17,283.3	84,323.6	252,317.3	681,180.7
Black marlin	3,919.0	6,518.4	1,134.2	88.3	4,480.6	11,589.0	27,729.5
White marlin	1,717.1	8,399.9	4,225.8	1,607.0	3,829.1	24,799.5	44,578.4
Blue marlin	-	-	-	-	-	-	-
Striped marlin	-	-	-	-	-	-	-
Red marlin	11,363.3	5,804.8	3,129.6	651.2	7,840.3	7,817.8	36,607.0
Sailfish	782.2	3,196.7	402.5	139.3	7,976.0	14,503.9	27,000.6
Skipjack	-	-	-	-	-	-	-
Swordfish	9,889.6	34,189.1	17,067.3	5,272.3	19,101.7	16,219.6	101,739.6
Shark	1,187.8	6,768.5	905.4	-	-	2,543.6	11,405.3
Moro	12,668.7	32,264.5	7,834.5	4,338.5	18,395.2	-	75,501.4
Others	7,861.4	21,577.2	8,065.2	5,442.4	15,397.3	20,410.5	78,754.0
Total	352,774.7	1,003,183.8	522,699.4	242,063.0	658,453.8	655,236.1	3,434,410.8

Note: Total production of deep-sea fish for 1973 was 6,941,629 kg (6,942 t).

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix B.--Kenya. Cold stores of tuna and allied species landed at Kenya Fishing Industries Ltd. in Mombasa by foreign tuna longliners, 1974

Species	January	February	March	April	May	June	6-month subtotals
				Kilograms			
Albacore	262,073	177,558	238,288	34,724	97,520	-	810,163
Bigeye tuna	162,078	82,284	146,418	126,154	131,665	-	648,599
Bluefin tuna	-	-	-	-	-	-	-
Yellowfin tuna	293,202	259,834	323,764	472,152	226,144	-	1,575,096
Black marlin	25,751	48,035	89,136	43,554	-	-	206,476
White marlin	5,960	6,038	8,298	35,316	6,401	-	62,013
Blue marlin	-	-	-	-	-	-	-
Striped marlin	-	-	-	-	-	-	-
Red marlin	19,271	9,383	24,383	8,282	5,527	-	66,846
Sailfish	31,582	19,174	40,067	65,886	17,941	-	174,650
Skipjack	-	-	-	-	-	-	-
Swordfish	13,325	12,355	15,643	19,235	22,290	-	82,848
Shark	5,490	-	16,611	628	3,732	-	26,461
Moro	19,358	17,587	19,224	22,240	28,313	-	106,722
Others	43,268	30,694	42,154	56,436	33,786	-	206,338
Total	881,358	662,944	963,986	884,607	573,319	-	3,966,212

Appendix B.--Continued

Species	July	August	September	October	November	December	6-month subtotals
	Kilograms						
Albacore	177,213	148,296	334,753	-	119,614	95,215	875,091
Bigeye tuna	26,654	310,925	123,661	-	51,047	422,212	934,499
Bluefin tuna	-	310,925	2,567	-	-	2,032	315,524
Yellowfin tuna	33,340	305,756	95,816	-	44,253	24,658	725,746
Black marlin	3,871	25,596	10,889	-	3,941	25,822	70,119
White marlin	1,802	6,948	3,375	-	2,191	8,244	22,560
Blue marlin	-	-	-	-	-	-	-
Striped marlin	-	-	-	-	-	-	-
Red marlin	4,153	29,445	17,818	-	5,915	27,317	84,648
Sailfish	2,214	20,872	7,484	-	3,301	21,828	55,699
Skipjack	-	-	-	-	-	-	-
Swordfish	15,264	43,864	31,571	-	11,015	37,811	139,495
Shark	-	291	-	-	-	-	291
Moro	11,983	28,897	24,369	-	10,988	28,626	104,863
Others	9,473	107,877	31,075	-	11,582	37,798	197,805
Total	285,967	1,339,692	683,378	-	263,847	953,486	3,526,370

Note: Total production of deep-sea fish for 1974 was 7,492,582 kg (7,493 t).

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix C.--Kenya. Exports and/or transshipment of frozen tuna, allied species, and shrimp by Kenya Fishing Industries Ltd., January-June 1975

Species	January	February	March	April	May	June	6-month subtotals
	Kilograms						
Albacore	161,041.6	-	52,648.1	-	-	-	213,689.7
Bigeye tuna	330,000.0	16,677.0	209,863.9	65,500.0	-	322,870.1	944,910.7
Bluefin tuna	-	-	3,338.7	-	-	-	3,338.7
Yellowfin tuna	932,374.4	-	310,231.9	331,125.5	-	544,000.0	2,117,731.8
Black marlin	-	19,982.3	-	26,379.9	-	23,851.1	70,213.3
White marlin	-	11,644.7	-	7,942.3	-	10,566.2	30,153.2
Red marlin	-	23,727.5	-	12,832.8	-	8,763.3	45,323.6
Sailfish	-	26,462.1	-	20,879.9	-	11,955.0	59,297.0
Swordfish	43,897.3	-	-	1,242.2	-	50,786.0	95,925.0
Shark	-	99,399.4	-	20,892.9	-	19,791.2	140,083.5
Moro	41,000.0	-	-	35,873.0	-	-	76,873.0
Prawns	-	-	-	-	-	17,000.0	17,000.0
Others	-	62,981.6	-	-	-	27,115.4	90,097.0
Total	1,508,313.3	260,874.6	576,082.3	522,668.5	-	1,036,698.3	3,904,637.0

Note: Total exports were 3,904,637 kg.

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix D.--Kenya. Fishery imports, by country, 1970-75

Year	Uganda		Tanzania		Other countries		Total imports	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric tons	US$1,000	Metric tons	US$1,000	Metric tons	US$1,000	Metric tons	US$1,000
1975	281	117	184	259	1,966	1,376	2,431	1,752
1974	347	156	687	347	2,533	1,660	3,567	2,163
1973	559	329	571	292	883	520	2,013	1,141
1972	575	376	402	272	379	102	1,356	750
1971	542	344	920	557	2,480	724	3,942	1,625
1970	434	249	2,651	1,414	2,279	911	5,364	2,574

Note: 1970-1974 exchange rate: US$1.00 = 7.00 Kenya shillings; in 1975, US$1.00 = 8.25 Kenya shillings.

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix E.--Kenya. Fishery exports, by country, 1970-75

Year	Uganda		Tanzania		Other countries		Total exports	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric tons	US$1,000	Metric tons	US$1,000	Metric tons	US$1,000	Metric tons	US$1,000
1975	1/ n.a.	1/ n.a.	1/ n.a.	1/ n.a.	1,119	984	1/ n.a.	1/ n.a.
1974	472	284	8	4	903	715	1,383	1,003
1973	664	425	0	0	648	632	1,312	1,057
1972	521	314	21	14	569	521	1,111	849
1971	1,471	849	62	31	1,408	602	2,941	1,482
1970	659	323	83	60	627	336	1,369	719

1/ Not available.
Note: 1970-1974 exchange rate: US$1.00 = 7.00 Kenya shillings; in 1975, US$1.00 = 8.25 Kenya shillings.

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix F.--Kenya. Fishery imports, by country, product, and quantity, 1973-75

Product	Uganda			Tanzania			Others			Total		
	1973	1974	1975	1973	1974	1975	1973	1974	1975	1973	1974	1975
	Metric tons											
Fish, fresh or frozen	299	111	66	11	6	13	2	85	23	312	202	102
Fish, salted, dried, or smoked	260	236	215	454	537	73	65	1,591	666	779	2,364	954
Fish, in airtight containers and fish preparations	-	-	-	-	-	-	1/349	194	158	1/349	194	158
Crustaceans and mollusks, fresh, frozen, salted, or dried	-	-	-	106	109	98	-	3	7	106	112	105
Fish meal and oils	-	-	-	-	35	-	1/597	660	1,112	1/597	695	1,112
Total	559	347	281	571	687	184	883	2,533	1,966	2,013	3,567	2,431

1/ Figures do not add correctly; there is an error of 130 t in excess of the reported total in one or the other cited figure.

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix G.--Kenya. Fishery exports, by country, product, and quantity, 1973-75

Product	Uganda			Tanzania			Others			Total		
	1973	1974	1975	1973	1974	1975	1973	1974	1975	1973	1974	1975
	Metric tons											
Fish, fresh or frozen	15	6	-	-	-	-	155	258	128	170	264	128
Fish, salted, dried, or smoked	649	466	-	-	8	-	463	597	928	1,112	1,071	928
Fish, in airtight containers and fish preparations	-	-	-	-	-	-	-	2	2	-	2	2
Crustaceans and mollusks, fresh, frozen, salted, or dried	-	-	-	-	-	-	30	45	61	30	45	61
Fish meal and oils	-	-	-	-	-	-	-	1	-	-	1	-
Total	664	472	-	-	8	-	648	903	1,119	1,312	1,383	1,119

Source: Ministry of Tourism and Wildlife. Fisheries Department.

Appendix H.--Kenya. Exports of frozen shrimp and prawns to Japan, 1975-73

Year	Quantity	Value	Price	
	Metric tons	US$1,000	US$ per kg	US$ per lb
1975	42.6	204.4	4.80	2.18
1974	23.0	116.2	5.05	2.30
1973	16.9	72.7	4.30	1.95

Source: Japan Exports & Imports, published by the Japan Tariff Association, 1975-73. (Rates of exchange used for conversion are 272.19 yen = US$1.00 for 1973, 291.51 yen = US$1.00 for 1974, and 296.80 yen = US$1.00 for 1975.)

Appendix I.--United States. Imports of fishery products from Kenya by product, quantity, and value, 1974 and 1975

Product	Year			
	1975		1974	
	Metric tons	US$1,000	Metric tons	US$1,000
Albacore, frozen	236.8	234.90	1,984.1	2,319.17
Yellowfin, frozen	-	-	149.7	123.75
Rock lobster tails, frozen	0.1	0.92	4.3	37.41
Other shellfish	13.4	35.66	-	-
Total	250.3	271.49	2,138.1	2,480.33

Source: U.S. Department of Commerce, Bureau of the Census.